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Corrigendum

Corrigendum to "High-energy limit of quantum electrodynamics beyond Sudakov approximation" [Phys. Lett. B 745 (2015) 69]

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There is a sign misprint in the third line of Eq. (7) which should read $\phi^c(\eta,\xi) = \exp\big[-x\eta\,(\eta+2\xi-2)\big]$. In the analysis of the high-order corrections the double-logarithmic contribution due to the soft photon exchange between the soft and external electron lines, Fig. 2(d), has not been taken into account. This contribution results in an additional factor $\phi^d(\eta_2)\phi^d(\xi_1)$ in the integrand of Eq. (6), where $\phi^d(\eta) = \exp\big[-x(1-\eta)^2\big]$. It changes the coefficients of the series (9). The corrected coefficients are listed in a new Table 1. The asymptotic behavior of $F_1^{(1)}$ at large x given by Eqs. (10), (11), (12) is modified. The numerical result for the function $f(x) = -3F_1^{(1)}$ is presented in Fig. 3. The function rapidly grows at $x \sim 1$ and then monotonically approaches the limit $f(\infty) = 1.33496\ldots$ corresponding to $F_1^{(1)}(x=\infty) = -0.444988\ldots$. Thus the power-suppressed amplitude is enhanced by the double-logarithmic corrections at high energy though the enhancement is not as significant as it was suggested by Eqs. (11), (12).

The main conclusions of the paper do not change.

Table 1
The normalized coefficients of the series (9) up to $n=7$.

n	1	2	3	4	5	6	7
$(-1)^n n! c_n$	$\frac{29}{30}$	$\frac{257}{210}$	$\frac{1231}{630}$	$\frac{396\,581}{103\,950}$	$\frac{5\,531\,381}{630\,630}$	$\frac{72\,078\,311}{3\,153\,150}$	$\frac{4\,510\,839\,803}{68\,918\,850}$

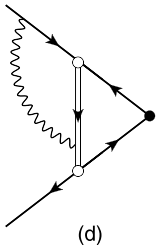

Fig. 2. Feynman diagram contributing to the double-logarithmic correction factor ϕ^d.

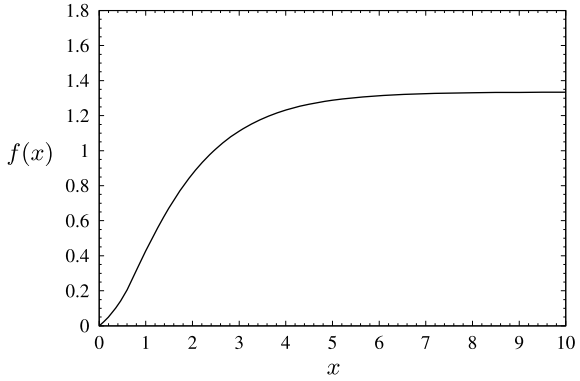

Fig. 3. The result of the numerical evaluation of the function $f(x) = -3F_1^{(1)}$.

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